

## Establishing a local background concentration for your site

If you think your site has naturally high concentrations of trace elements, you may wish to establish your own local background concentration.

When establishing a local background, the site selection, sampling and testing need to be undertaken according to the protocols set out in this fact sheet. This is to ensure that the user produced background levels are reliable and consistent with the methods used in the main study. ECan recommends that an environmental consultant with a proven track record be engaged to undertake this work.

### Site selection

Only sites without historical potential for point source contamination may be sampled. A short review of the site's history must be carried out and should include:

- Enquiries with the District or City Council regarding the occurrence of land-filling and any contamination records relating to the site (to ascertain past HAIL activities);
- Enquiries with ECan regarding the presence of the site on the LLUR, and
- Review of historical aerial photographs if available.

### Sample collection

Samples must be collected in accordance with the sampling methodology contained within the full technical report<sup>1</sup>. This report is available from ECan's Customer Services. To generate robust data, two different sites (with the same soil type) should be sampled, with 3 composite samples collected from each site.

In addition to the collection of samples, a shallow (0.5m) test pit must be dug at each sampling location. This is necessary to confirm the soil type and to check that the soil profile has not been modified.

### Analysis

We recommend that samples be analysed for the following trace elements using total recoverable analysis:

- Arsenic
- Boron
- Cadmium
- Chromium

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<sup>1</sup> Background concentrations of selected trace elements in Canterbury soils. Addendum 1: Additional samples and Timaru specific background levels. Environment Canterbury 2007. Report R07/1/2

- Copper
- Lead
- Manganese
- Mercury
- Nickel
- Zinc

### **Information to provide to ECan**

After completion of the sampling, the following information needs to be provided to ECan:

- A one page summary of the site history and evidence of why the site will provide a suitable background for your site ;
- Logs and photographs of all test pits including a site plan showing location of samples and surrounding landuse, and
- Summary of results including median, range and maximum plus 1/2 inter-quartile range of the data.

### **Designation of local background**

If the submitted information is approved by ECan, a local background will be accepted based on the maximum (level one concentration) and the maximum plus 1/2 inter-quartile range (level two concentration) of the collected data.

1 Background concentrations of selected trace elements in Canterbury soils. Addendum 1: Additional samples and Timaru specific background levels. Environment Canterbury 2007. Report R07/1/2